

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (Canceled)

Claim 3 (Twice amended): In a burst-type communication system comprising a transmitter and a receiver, a method of communicating information in a preamble synchronization sequence of a burst transmission, comprising:

selecting, at the transmitter, a selected one of a plurality of initial detection sequences, representing one or more first preamble information bits;


selecting, at the transmitter, a selected one of a plurality of unique words, representing one or more second preamble information bits;

transmitting, at the transmitter, said preamble synchronization sequence comprising said selected one initial detection sequence and said selected one unique word;

receiving, at the receiver, said preamble synchronization sequence;

detecting, at the receiver, said one initial detection sequence to produce first time synchronization information and to receive said one or more first preamble information bits; and

detecting, at the receiver, said one unique word to produce second time synchronization information and to receive said one or more second preamble information bits;

The method of claim 1, wherein the plurality of initial detection sequences comprises one or more pairs of initial detection sequences, wherein each pair of initial detection sequences comprises a first initial detection sequence and a second initial detection sequence, said second initial detection sequence being a logical inverse of said first initial detection sequence.

Claim 4 (Twice amended): In a burst-type communication system comprising a transmitter and a receiver, a method of communicating information in a preamble synchronization sequence of a burst transmission, comprising:

selecting, at the transmitter, a selected one of a plurality of initial detection sequences, representing one or more first preamble information bits;

selecting, at the transmitter, a selected one of a plurality of unique words, representing one or more second preamble information bits;

transmitting, at the transmitter, said preamble synchronization sequence comprising said selected one initial detection sequence and said selected one unique word;

receiving, at the receiver, said preamble synchronization sequence;

detecting, at the receiver, said one initial detection sequence to produce first time synchronization information and to receive said one or more first preamble information bits; and

detecting, at the receiver, said one unique word to produce second time synchronization information and to receive said one or more second preamble information bits;

~~The method of claim 1~~, wherein the plurality of unique words comprises one or more pairs of unique words, wherein each pair of unique words comprises a first unique word and a second unique word, said second unique word being a logical inverse of said first unique word.

Claim 5 (canceled)

Claim 6 (canceled)

Claim 7 (canceled)

Claim 8 (canceled)

Claim 9 (canceled)

Claim 10 (canceled)

Claim 11 (amended): In a burst-type communication system comprising a transmitter and a receiver, a method of communicating information in a preamble synchronization sequence of a burst transmission, comprising:

selecting, at the transmitter, a selected one of a plurality of initial detection sequences, representing one or more first preamble information bits;

selecting, at the transmitter, a selected one of a plurality of unique words, representing one or more second preamble information ~~X~~ bits;

transmitting, at the transmitter, said preamble synchronization sequence comprising said selected one initial detection sequence and said selected one unique word;

receiving, at the receiver, said preamble synchronization sequence;

detecting, at the receiver, said one initial detection sequence to produce first time synchronization information and to receive said one or more first preamble information bits; and

detecting, at the receiver, said one unique word to produce second time synchronization information and to receive said one or more second preamble information bits;

~~The method of claim 1~~, wherein detecting the one initial detection sequence includes:

generating, at the receiver, an initial signal detection peak in response to the preamble synchronization sequence; and

determining a polarity of the initial signal detection peak to receive one of said one or more first preamble information bits.

Claim 12 (canceled)

Claim 13 (canceled)

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (amended): A communication receiver receiving a preamble synchronization sequence comprising an initial detection sequence and a unique code word, said receiver comprising:
means for detecting the initial detection sequence to produce therefrom one or more first


preamble information bits; and

means for detecting the unique word to produce therefrom one or more second preamble information bits;

wherein the means for detecting the initial detection sequence comprises:

a delay line integrator receiving the initial detection sequence and producing therefrom an initial signal detection peak; and

a threshold detector receiving the initial signal detection peak and producing therefrom the one or more first preamble information bits;

 ~~The communication receiver of claim 15~~, wherein the threshold detector determines a polarity of the initial signal detection peak and provides the one first preamble information bit corresponding to the polarity of the initial signal detection peak.

Claim 17 (amended): A communication receiver receiving a preamble synchronization sequence comprising an initial detection sequence and a unique code word, said receiver comprising:

means for detecting the initial detection sequence to produce therefrom one or more first preamble information bits; and

means for detecting the unique word to produce therefrom one or more second preamble information bits;

wherein the means for detecting the initial detection sequence comprises:

a delay line integrator receiving the initial detection sequence and producing therefrom an initial signal detection peak; and

a threshold detector receiving the initial signal detection peak and producing therefrom

the one or more first preamble information bits;

~~The communication receiver of claim 15~~, wherein the threshold detector produces an initial detection output signal indicating a timing of the initial detection sequence.

Claim 18 (previously added): The communication receiver of claim 17, further including an initial detection gate enabling the initial detection output signal during time periods when the receiver is seeking to receive a burst-type transmission including the preamble synchronization sequence, and disabling the initial detection output signal during time periods when the receiver is not seeking to receive a burst-type transmission including the preamble synchronization sequence.

Claim 19 (canceled)

Claim 20 (canceled)

Claim 21 (amended): A communication receiver receiving a preamble synchronization sequence comprising an initial detection sequence and a unique code word, said receiver comprising: means for detecting the initial detection sequence to produce therefrom one or more first preamble information bits; and

means for detecting the unique word to produce therefrom one or more second preamble information bits;

wherein the means for detecting the unique word includes a matched filter matched to the unique word;

wherein the matched filter is a tapped delay line producing a correlation peak when the
unique word is detected; and

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~~The communication receiver of claim 20,~~ wherein the means for detecting the unique
word determines a polarity of the correlation peak and provides the one second preamble
information bit corresponding to the polarity of the correlation peak.

Claim 22 (canceled)
